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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,917	08/02/2001	Loic Brunel	211922US2	3990

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EXAMINER	
KUMAR, PANKAJ	

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/919,917	BRUNEL, LOIC	
	Examiner	Art Unit	
	Pankaj Kumar	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15 and 24* is/are rejected.

7)☒ Claim(s) *16-23 and 25-28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Response to Amendment

Specification

1. The abstract of the disclosure is objected to because

a. It should not contain the title of the invention.

2. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 15, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kochiyama USPN 5,400,036 in view of Wagstaff USPN 6,356,510. Here is how the reference teaches the claim:

5. As per claim 15: Method of estimating the channel and the direction of arrival of a signal transmitted by a transmitter and received by an array of antennae after being propagated along at least one path (Kochiyama fig. 1: receivers 1, 2, 3, 4 receiving the transmitted signal P), comprising for each path:

6. a first step of estimating for each antenna in the array of antennae a total phase difference from a signal received by each antenna (Kochiyama col. 5 lines 12-14: phase difference by each of the antennas is used later) (Kochiyama fig. 1: the phase difference from one antenna to the other is the total phase difference which provides the total phase rotation)

7. a second step of estimating the angle of arrival (ë) of the signal (Kochiyama col. 5 line 14-15: the phase difference is used for calculating target direction angle) as well as the phase rotation (1z) undergone by the signal along the at least one path using each of the antennae total phase differences determined in the first step; (Kochiyama fig. 1: the phase difference from one antenna to the other is the total phase rotation) and

8. a third step of estimating the attenuation (a) undergone by the signal along the said path from the estimated values (; , 0j) of the phase rotation and the angle of arrival (not in Kochiyama but would be obvious as explained below).

9. What Kochiyama does not teach is estimating the attenuation undergone by the signal along the said path from the estimated values of the phase rotation. What Wagstaff 6356510 teaches is estimating the attenuation undergone by the signal along the said path from the estimated values of the phase rotation (Wagstaff col. 6 lines 30-34). Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to arrive at the estimating the attenuation undergone by the signal along the said path from the estimated values of the phase rotation as recited by the instant claims, because the combined teaching of Kochiyama with Wagstaff suggest estimating the attenuation undergone by the signal along the said path from the estimated values of the phase rotation as recited by the instant claims. Furthermore, one of ordinary skill in the art, would have been motivated to combine the

teachings of Kochiyama with Wagstaff because Kochiyama suggests amplifying is based on the output signal that is received and collected (Kochiyama claims 4 and 5) and thus it needs to know the attenuation in order to know how much to amplify (something broad) in general and Wagstaff suggests the beneficial use of estimating attenuation from the phase rotation such as to attenuate noise and clutter signals (Wagstaff col. 6 line 31) in the analogous art of communication.

~~10.~~ What Kochiyama does not teach is estimating the attenuation from the angle of arrival. Stein 4714802 teaches estimating attenuation from the angle of arrival (Stein col. 8 line 66 to col. 9 line 1). Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to arrive at the estimating the attenuation from the angle of arrival as recited by the instant claims, because the combined teaching of Kochiyama with Stein suggest estimating the attenuation from the angle of arrival as recited by the instant claims. Furthermore, one of ordinary skill in the art, would have been motivated to combine the teachings of Kochiyama with Stein because Kochiyama suggests amplifying is based on the output signal that is received and collected (Kochiyama claims 4 and 5) and thus it needs to know the attenuation in order to know how much to amplify (something broad) in general and Stein suggests the beneficial use of estimating attenuation from the angle of arrival such as to determine which direction the signal is coming from (Stein col. 2 lines 39-42) in the analogous art of communication.

11. Various limitations in the preamble, such as channel and propagated, recite the intended use of a structure and the body of claim does not depend on such limitations for completeness and the bodily limitations are able to stand alone of such limitations. Thus, such limitations in

the preamble are not accorded patentable weight as the bodily limitations do not require such limitations as channel or propagated.

12. As per claim 24, the rejection of claim 15 applies.

Allowable Subject Matter

13. Claims 16-23, 25-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (571) 272-3011. The examiner can normally be reached on Mon, Tues, Thurs and Fri after 8AM to after 6:30PM.

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pankaj Kumar
Patent Examiner
Art Unit 2631

PK